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National Saving in Canada and the United States, 1926 to 2011

by Amélie Lafrance and Ryan Macdonald

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p	preliminary
r	revised
x	suppressed to meet the confidentiality requirements of the *Statistics Act*
E	use with caution
F	too unreliable to be published
*	significantly different from reference category ($p < 0.05$)

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Amélie Lafrance and Ryan Macdonald,
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Abstract

This paper examines the composition of Canadian and United States gross national saving for a period spanning more than 80 years, using time series from the Bureau of Economic Analysis in the United States and a newly created dataset for Canada.

The paper tracks short-term, year-to-year fluctuations, cyclical fluctuations and long-term compositional changes. It illustrates a substantial degree of national saving reallocation across sectors, annually and across business cycles. The national saving rate is more stable than sector saving rates, implying that sectoral changes have been largely offsetting.

Executive summary

An economy's access to saving influences its investment prospects, and hence, its ability to increase productivity, capital stocks, and living standards. The saving that a nation uses to finance investment may come from internal sources, or may be borrowed from other countries.

Measures of national saving for Canada and the United States are calculated using the practices and recommendations in the System of National Accounts, the internationally accepted handbook for macroeconomic measurement. The System of National Accounts provides a consistent framework for examining the contribution to national saving of four sectors: households, corporations, governments, and non-residents. The sum of the gross saving from these four sectors equals national saving.

Over time, the sources of saving within an economy can evolve, and the relative importance of different sectors will vary across nations. The differences between Canada and the United States, as well as the evolution of the composition of saving within each country, are the focus of this analysis. Data from the 1920s to 2011 provide a long-term perspective on gross national saving in North America.

The paper examines several questions:

Are data covering more than 80 years reliable for this type of analysis?

The data used in this analysis are reliable. The U.S. data are from the National Income and Product Accounts, which provide official measures of income and expenditure for each sector from 1929 to 2011.

Canadian sources present a greater challenge because three vintages of data are used to construct the time series. The earliest official estimates of income and expenditure by sector start in 1926. However, Statistics Canada does not retroactively amend aggregate time series back to 1926 when it revises its Canadian System of National Accounts. Consequently, different vintages of data cover different time periods. To measure national saving, overlapping vintages spanning 1926 to 1986, 1961 to 2011 and 1981 to 2011 are used. Variables like income, depreciation, capital transfers and expenditures for each sector from historical vintages are used as instrumental variables for the modern vintage, and the levels of the modern vintage are backcast based on the growth rates in the historical vintages. The result is a time series with historical values that match, as closely as possible, levels, practices and norms in the modern vintage.

How has national saving changed since the 1920s?

In response to the effects of the Great Depression, and then, the Second World War, the national saving rate fell during the 1930s and rose in the 1940s in Canada and the United States. After the Second World War, the national saving rate in the United States averaged 21.6% of gross national income (GNI), and was stable outside of the recession in the early 1990s and the end of the 2000s when it declined for multiple years. For Canada, from 1950 to 1971 the national saving rate was stable, averaging 24.7% of GNI. During the 1970s and 1980s, its rate declined and then stabilized at an average of 21.8% between 1990 and 2011.

Are saving rates stable through time?

None of the saving rates are stable around a long-run average for the entire study period, although the national rates are more stable than sector rates. In the United States, there was a trend toward higher saving rates through the first half of the period while for Canada, lower national saving rates occur after the 1980s, compared with the 1950-to-1971 period.

Sector saving rates were much more variable. This variability was not fully reflected in the national rate because changes across sectors tend to offset each other. During recessions, changes are more pronounced in sector rates than at the national level. Declines in government saving (or increased deficits) and declines in corporate profits are offset by rising household or non-resident saving. The converse can happen during expansions. For example, in Canada, declines in the household saving rate in the 1990s were accompanied by lower government deficits, and then, surpluses. In the United States, falling household saving rates after the early 1970s were offset by rising non-resident saving rates.

How has the composition of national saving changed between the 1950-to-1971 and 1990-to-2011 periods?

From 1950 to 1971, households, governments and corporations all contributed to national saving in Canada and the United States. For the United States, non-residents had negative saving, which represented a flow of investment dollars from the United States to other countries during the period of rebuilding after the Second World War. In Canada, non-residents had positive saving as foreigners invested in Canada. This pattern generally held until the early 1970s (notably, the 1973 Oil Shock) when the sectoral allocation of saving changed.

In the United States, saving rates of governments and households declined. Government surpluses became deficits that persisted throughout the remainder of the sample period, except for a few years in the 1990s. For households, a long, steady decline in the saving rate continued up to the 2000s. The corporate saving rate, which had increased moderately through 1950 to 1970, continued to rise. Non-resident saving rates became positive in the 1970s, and rose during the 1980-to-2011 period. By 2010 and 2011, non-residents were contributing around a sixth of U.S. national saving. Saving in the United States shifted from the domestic sectors (households plus governments plus corporations) funding all internal investment and some external investment to a situation where domestic saving was not sufficient to fund internal investment, and non-resident saving became an important source of investment funds.

In Canada, the domestic sectors were the main source of funds for investment throughout the period. However, their relative contributions varied over time. In the 1950-to-1971 period, governments, households and corporations all contributed to national saving; the contribution of non-residents usually amounted to around 10% of funds available for investment during the 1950s but declined through the 1960s. Like the United States, governments in Canada moved to a deficit position in the 1970s, but unlike the United States, the household saving rate rose. After peaking in the 1980s, Canadian household saving rates declined. Domestic saving fell, and non-resident saving increased, amounting to 23.3% of national saving in 1992, as corporate saving declined during the recession of the early 1990s. Fiscal changes after the recession raised government saving, which helped offset the continuing decline in household saving rates. Through the 1990s, domestic saving regained its prominence as a source of investment funds. After 2000, although government deficits returned and household saving rates remained low, corporate saving increased. The result was a level of domestic saving comparable to that in the 1950-to-1971 period. National saving, however, was lower than in the earlier period, because non-resident saving rates were negative during much of the 2000s. This was the first time since 1926 that Canada invested an important share of national income abroad for an extended period of time.

1 Introduction

An economy's access to saving influences its investment prospects, and hence, its ability to increase productivity, capital stocks, and living standards. The saving a country uses to finance investment may come from internal sources, or may be borrowed from other countries. Regardless of the source, complex market interactions transform saving into investment.

Considerable attention has been devoted to the transformation of saving into investment. The studies illustrate the long-run behaviour of saving (Maddison 1995); that saving does not flow smoothly across international borders even when there are no capital controls (Feldstein and Horioka 1980; Coakley et al. 1998; Amornthum 2003; Apergis and Tsoumas 2008); that liquid assets within firms (corporate saving) are an indicator of investment constraints, and therefore, of investment activity (Chatelain 2002); and that domestic policy can have direct effects on saving (Boskin 1978; Broadway, Bruce and Mintz 1984; Kotlikoff 1984; Carrol and Summers 1987; Ragan 1995; Sablehaus 1997; Loayza, Schmidt-Hebbel and Servén 2000; Horner 2008).

Most studies focus on the saving equals investment relationship and how variables such as interest rates, expected inflation and public policy help determine the saving equals investment equilibrium. Studies of saving tend to look at national saving across countries (Feldstein and Bacchetta 1989) or the saving of particular sectors (Carrol and Summers 1987). Fewer studies (O'Hagan 2005) look at the composition of saving by sector.

This paper compares the composition of gross national saving rates in Canada and the United States. It documents considerable reallocation of saving among sectors from year-to-year, across business cycles, and over longer periods spanning decades. Several features of North American saving rates emerge: (1) aggregate national saving rates have declined in Canada but remained stable in the United States after the Second World War; (2) aggregate national saving is more stable than the saving rates of the underlying sectors; (3) sector saving rates often move in opposite directions, which provides stability for the national saving rate; (4) over longer periods, the composition of saving within economies evolves; and (5) sector saving rates are poor predictors of aggregate saving rates, and hence, poor predictors of the aggregate investment rate.

The remainder of the paper analyzes trends and patterns in saving rates in Canada and the United States. Section 2 describes the data. Section 3 discusses the aggregate saving rate and its composition. Section 4 looks at hybrid saving rates that are created by combining various sectors. An examination of private saving (household plus corporate), non-corporate saving (household plus government) and domestic saving (household plus government plus corporate) is provided. Section 5 concludes.

2 Data and measurement

The Canadian System of National Accounts and the National Income and Product Accounts in the United States are the data sources for this analysis. Both are based on the System of National Accounts (SNA), the manual used by Statistics Canada and the Bureau of Economic Analysis (BEA) in the United States for estimating aggregate income and expenditure. The SNA divides the economy into four sectors that are broadly comparable across national boundaries: household, corporate, government, and non-resident. The household sector is an aggregation of households and non-profit institutions serving households.

For each sector, saving can be calculated on a net or a gross basis. A net saving rate is based on the difference between net incomes and outlays. It corresponds to saving measures, such as the household saving rate or government surpluses and deficits. A gross saving rate adds depreciation and capital transfers to the net saving rate. Gross saving is the surplus of gross income over expenditures, and so represents the value of gross physical investment within an economy. The gross saving rate is the appropriate rate to employ for examining sources of surplus funds used for investment in an economy. Throughout this paper, the gross saving concept is employed.

The non-resident sector has a different treatment from domestic sectors for measuring gross saving. No depreciation is recorded for non-residents, because, in the SNA, they hold financial assets rather than physical assets. Their net saving is therefore measured as the negative of the current account balance in the balance of payments less net reinvested earnings on direct investment. To measure gross saving, capital transfers are included. The current account is composed of the trade balance (exports less imports), current income receipts less payments (such as interest and dividend payments for foreign investment) and remittances to and from abroad (essentially income returned to home countries by immigrants). A positive current account balance reflects movement of income from Canada to the rest of the world, which reduces the pool of financial capital available in Canada for borrowers, but increases the stock of assets owned by Canadians abroad. Conversely, when the United States runs a current account deficit, the deficit provides a flow of foreign money into the U.S. economy that can be borrowed by domestic sectors to fund investment or consumption.

The SNA provides a number of income metrics that can be employed to calculate saving rates. Here, the saving rate in each sector is calculated as a gross saving-to-gross national income (GNI) ratio. A national income concept is appropriate here because non-residents are an important source/destination of saving flows, making it important to have an income metric that includes their activities.

Aside from sharp fluctuations induced by business cycles, saving rates adjust slowly in response to changes in demographics, preferences and product mixes. Consequently, it is desirable to use as long a time series as possible for analysis. The BEA data extend from 1929 to 2011—83 years.[1] The current Canadian series dates from 1981, and so offers a much shorter time-span. To extend the Canadian data, current estimates are linked to the now-terminated data covering 1961 to 2011 and historical national accounts estimates published in the National Income and Expenditure Accounts Annual Estimates (NIEA-AE) 1926-1986 (see the Appendix).

In addition to allowing for analysis of the long-term evolution of saving, the series provide two reference points with which the current saving rate can be compared. The first—1929/1930 to 1939—corresponds to the Great Depression, the scale and scope of which has not since been

1. In 2013, the U.S. National Income and Product Accounts (NIPAs) underwent important revisions that have reduced the comparability of Canadian and U.S. saving rate estimates. The two most important features of the revisions of this paper are a move to accrual accounting for household pension assets/liabilities across sectors, and the decision to treat publishing and movie/cultural outputs as capital.

matched. It, therefore, illustrates how saving rates can behave during severe downturns and provides a baseline against which the Great U.S. Recession of 2007-2009 can be compared. The second—1939 to 1945—covers the Second World War, a period of heavy government borrowing.

3 National saving

A fundamental concept in economics is that saving equals investment; in other words, the national saving rate of any economy is equal to its investment rate:

$$\frac{I_t}{Y_t} = \frac{S_t}{Y_t}. \tag{1}$$

The focus of the present study is the right-hand side of the equation. An extensive literature has examined specific aspects of equation (1) such as the effect of fiscal policies, notably those related to government-provided retirement programs (Boskin 1978; Broadway, Bruce and Mintz 1984; Kotlikoff 1984; Carrol and Summers 1987; Ragan 1995; Sablehaus 1997; Loayza, Schmidt-Hebbel and Servén 2000; Horner 2008). Less information is available about changes in the composition of the saving rate over time, and how those changes compare between Canada and the United States. These topics are the focus of this paper.

3.1 Composition of net saving

The national saving rate can be decomposed as:

$$\frac{S_t}{Y_t} = \frac{S_t^{Household}}{Y_t} + \frac{S_t^{Corporate}}{Y_t} + \frac{S_t^{Government}}{Y_t} + \frac{S_t^{Non\text{-}resident}}{Y_t}. \tag{2}$$

where $Y_t = GNI_t$. The decompositions for the United States and Canada are displayed in Charts 1 and 2, respectively. The annual contributions to the national saving rate from the different sectors are illustrated in stacked bars. The contribution of each sector is indicated by the height of its segment, and the sum of the segments equals the national saving rate, which is shown as a line superimposed over the bars.

The national saving rate is relatively stable in both countries. Despite temporary declines during downturns in business cycles, the overall pattern was one of measured adjustment. By contrast, reallocations and trend changes occurred more frequently in sector saving rates, and offsetting movements between sectors underlay the low volatility in the national rate.

Table 1 presents estimates of the standard deviations for the sector and national saving rates normalized by their respective averages. This figure will be larger if a particular saving rate exhibits more year-to-year volatility, more business cycle volatility, or a stronger long-term trend. For the entire 1929-to-2011 period, the normalized standard deviations for the national saving rates in Canada and the United States were lower than those for all sectors except corporate saving. The pattern was the same for the 1950-to-2011 period, which was not affected by large deviations like the Great Depression and the Second World War.

Table 1
Normalized standard deviation of saving rates, by sector, the United States and Canada, 1929 to 2011 and 1950 to 2011

	Household	Government	Corporate	Non-resident	National
	normalized standard deviation				
1929 to 2011					
United States	0.409	3.650	0.171	2.644	0.187
Canada	0.459	3.450	0.239	0.949	0.204
1950 to 2011					
United States	0.194	2.821	0.099	1.634	0.079
Canada	0.362	1.816	0.159	1.269	0.095

Note: Authors' calculations based on data from the sources indicated below.

Sources: Statistics Canada, Canadian System of National Accounts; and Bureau of Economic Analysis, National Income and Product Accounts.

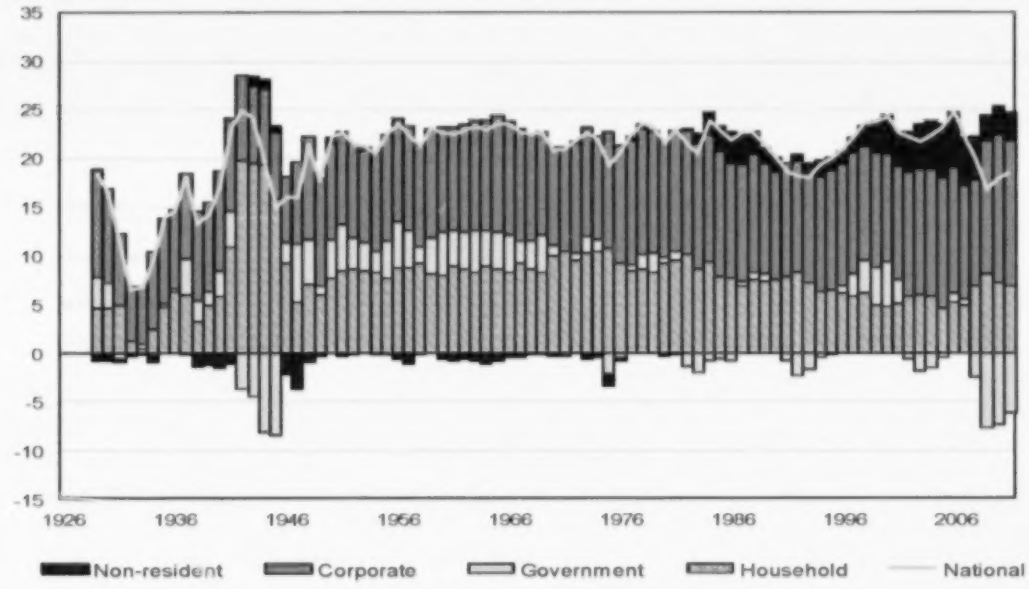
The higher variability in sector saving rates is reflected in changes in the composition of national saving over the course of decades as well as in sector responses to economic events. From 1946 to 1970, the United States saw a period of stability, during which household saving contributed 8.3 percentage points, on average, to national saving; government saving, 3.4 percentage points; and corporate saving, 10.5 percentage points. The non-resident sector reduced national saving by an average of 0.6 percentage points. While there were changes within sectors (for example, the household saving rates rose and government surpluses declined), the overall contribution of each sector was fairly stable. Starting with the first oil shock in 1973, and continuing through to the recession of the early 1990s, government saving rates declined, and became negative in some years as deficits rose. Except for a brief period from the mid-1990s to early 2000s, the tendency for governments collectively to run deficits continued through to the end of 2011. Household saving rates in the United States began a long-term decline in the 1970s, and the United States became a net importer of foreign saving. The corporate sector moderately increased saving each year between 1947 and 2011.

The importance of non-resident saving for investment in the United States emerged in the 1970s, and continued to increase. Previously, the United States had been a net exporter of saving to the rest of the world, but after the 1972/1973 and 1979/1980 oil shocks and the 1980 and 1981 recessions, non-residents increasingly relocated their saving to the United States. Some of the saving influx from abroad came from some of the Organization for the Petroleum Exporting Countries (OPEC) member states in the 1970s as oil profits were recycled, and from Japan in the 1980s as changes in foreign direct investment regulations led to outflows of financial capital. Between 1983 and 1989, non-residents contributed an average of 2.3 percentage points to the national saving rate. Approximately 10% of the United States' national saving was due to contributions from non-residents.

Non-residents continued to contribute to saving in the United States during the 1990s. Between 1993 and 1999, non-residents contributed an average of 1.8 percentage points to the national saving rate. The return of government surpluses in the mid-1990s meant that non-residents accounted for 8.5% of national saving. After 2001, non-residents' contribution to national saving in the United States rose, while the household saving rate fell to post-war lows, and governments again began to run deficits. As a result, between 2002 and 2007, non-residents contributed on average 5.0 percentage points to the national saving rate average of 22.7%. After the 2007-2009 U.S. recession, non-residents' contribution declined to an average of 2.8 percentage points between 2009 and 2011, which represented 15.8% of national saving.

Chart 1
National saving rate, by sector, the United States, 1926 to 2011

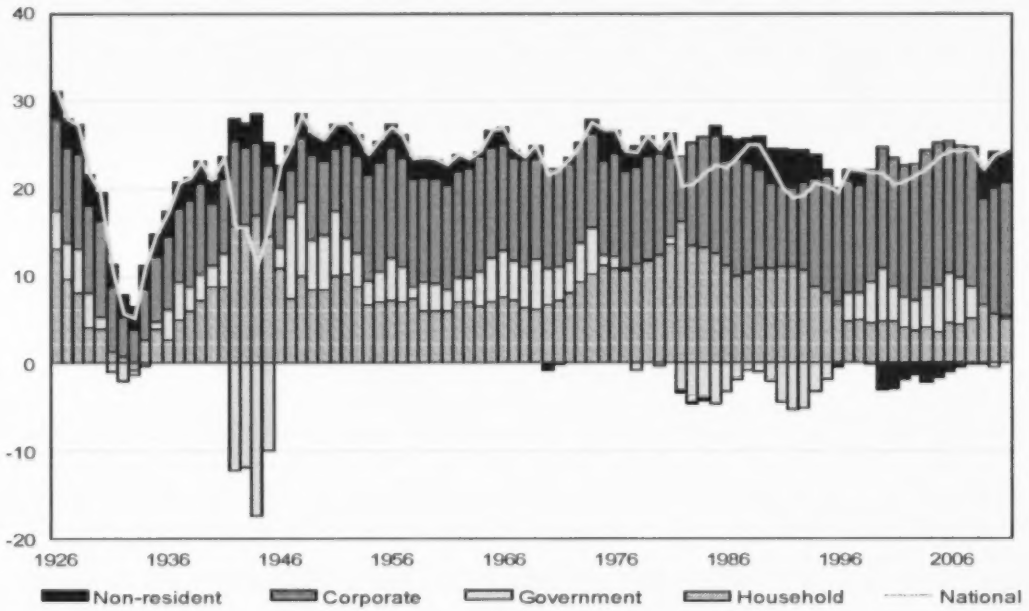
percent of gross national income



Note: Authors' calculations based on data from the source indicated below.
Source: Bureau of Economic Analysis, National Income and Product Accounts.

Chart 2
National saving rate, by sector, Canada, 1926 to 2011

percent of gross national income



Note: Authors' calculations based on data from the source indicated below.
Source: Statistics Canada, Canadian System of National Accounts.

In Canada, too, there were important shifts in the sector saving rates. From the end of the Second World War to the first oil shock, volatility in sector saving rates was greater in Canada than in the United States. Some of the volatility came from government saving, which varied from a high of 9.3 percentage points of the national saving rate in 1947 to a low of 1.4 percentage points in 1958, and from household saving, which varied from 10.1 percentage points in 1952 to 5.9 percentage points in 1959.

An increase in the household saving rate between 1969 and 1981 was offset by reductions in government saving, and thus, the national saving rate changed little. During the 1980/1981 recession, government deficits increased sharply, corporate saving declined, and non-resident saving became negative. As a result, the national saving rate fell from 26.2% of GNI in 1981 to 20.3% in 1982. Subsequent economic growth coincided with increases in corporate and government saving rates, so the national saving rate rose despite a decline in the household saving rate that was particularly sharp in the mid 1990s.

The 1991 recession led to increased government deficits and a contraction in corporate saving. Even though the household saving rate climbed modestly and non-resident saving remained positive, the national saving rate fell from 25.0% of GNI in 1989 to 18.9% in 1992. After the 1991 recession, the national rate rose as governments reduced their deficits and eventually began running surpluses, and as corporations increased their saving. By the 2000s, corporate contributions to national saving were historically large. Between 2002 and 2008, corporate saving averaged 15.5% of GNI versus an average of 11.3% between 1946 and 2001. The non-resident sector went from being primarily a source of financial capital to a recipient of financial capital.

The onset of the recession at the end of the 2000s led to a number of shifts in saving rates. Household saving rates increased, as did non-resident saving rates which had been negative for most of the previous decade. Corporate saving rates declined as economic conditions deteriorated, and government saving became negative. For households, corporations and governments, the pattern is similar to that found in previous downturns. But, for governments, the reduction in the saving rate during the recession was not as large as that seen in previous downturns. For non-residents, the changes that coincided with the recession returned the sector to its historical position as a provider of investment funds into Canada rather than as a recipient of funds.

During the 1926-to-2011 period, sector saving rates varied markedly in the short run because of economic shocks and cyclical changes, and also over the long-run because of an evolution of saving behavior. These developments are examined in more depth in the Subsections 3.2, 3.3 and 3.4 below. First, short-run (year-to-year) saving changes are examined. Second, a set of correlations across cycles illustrates the extent of offsetting changes in sector saving rates. Third, evolution of the national saving rate is discussed.

3.2 Annual reallocation of saving between sectors

One of the most striking features of national saving in Canada and the United States is the degree to which saving is reallocated across sectors. The extent of the reallocation displayed in Charts 1 and 2 can be measured by taking half of the sum of the absolute value of the changes in the saving rates for each sector. This technique is often referred to as a dissimilarity index. The measure is interpreted here as the share of GNI that would have to be shifted between sectors at time t to obtain the saving allocation found in $t-1$. The reallocation measure can be expressed as:

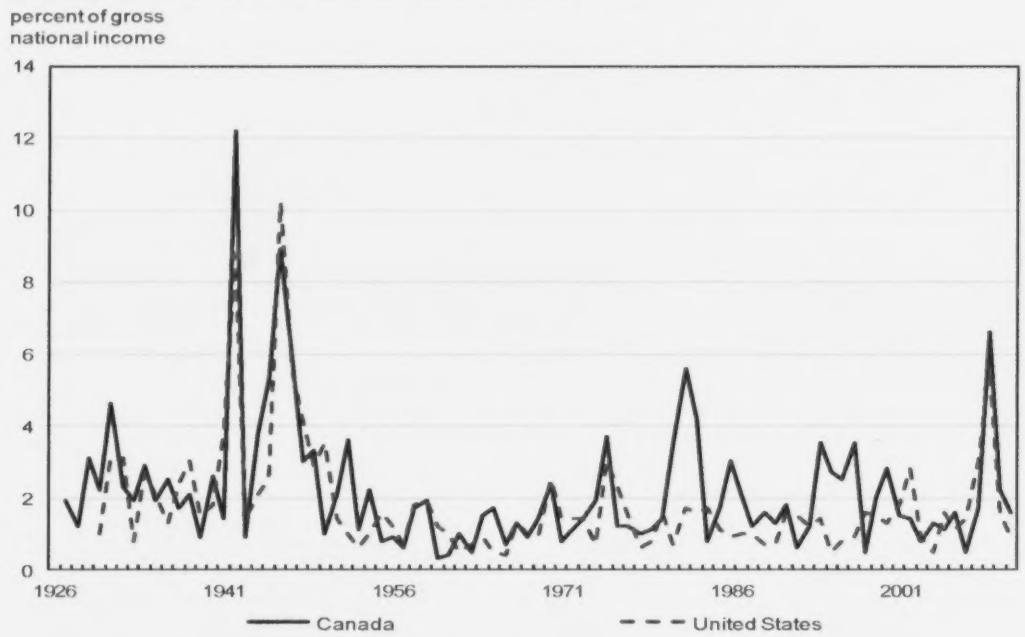
$$\text{Reallocation}_t = \frac{\sum \left| \left(s_{i,t} - s_{i,t-1} \right) \right|}{2}, \quad i = \text{H, G, C, NR.}$$

where s_i is the sectoral saving rate and H refers to households, G to governments, C to corporations and NR to non-residents.

The reallocation measures for Canada and the United States are plotted in Chart 3. Reallocation of saving occurred constantly in both countries, but the degree of reallocation rose during periods of adverse economic conditions.

Between 1927 and 1938, Canada would have had to reallocate an average of 2.4% of GNI each year to hold sector saving patterns constant. In the United States, an average of 2.2% of GNI would have had to be reallocated to hold saving patterns constant between 1930 and 1938. During the Second World War, large swings in sector saving rates occurred as governments sought to finance war expenditures. In some cases, the fluctuations in sector saving rates were so large that holding the sector saving rates at their initial levels would have required reallocating more than 10% of GNI.

Chart 3
Annual sector saving reallocation as a percentage of national saving, Canada and the United States, 1926 to 2011



Note: Authors' calculations based on data from the sources indicated below.
Sources: Statistics Canada, Canadian System of National Accounts; and Bureau of Economic Analysis, National Income and Product Accounts.

After the Second World War, the Canadian and U.S. economies entered a period of lower sectoral saving rate fluctuations. During the most stable period—1955 to 1965—an average of 1.0% of GNI in Canada and 1.1% in the United States would have had to have been reallocated to hold sector saving patterns constant.

Although there are periodic increases for the United States around the oil shocks and the bursting of the 2001 technology bubble, the period of low sectoral change tended to continue in the United States until the onset of the 2007-2009 recession. The reallocation needed to maintain sector saving patterns only occasionally rose above 2% of GNI during most of the 1950-2006 years. In 2009, as government deficits increased, the figure reached 5.6% in the United States.

In Canada, the largest reallocation after 1950 also occurred in 2009, when 6.6% of GNI would have had to have been reallocated to hold sector saving rates constant. However, unlike the United States, the necessary degree of reallocation rose sharply as the oil shocks and recessions of the 1970s though the 1990s affected economic conditions.

3.3 Offsetting saving rate changes

The stability of the national saving rate despite substantial sectoral reallocation suggests that sectoral changes often offset one another. These countervailing effects may occur across annual fluctuations and they may occur across business cycle phases.

At an annual frequency, the offsetting behaviour of sector saving rates can be measured using correlations between the changes in sector saving rates. For the United States, changes in household saving rates are negatively correlated with all changes in all other sectors (Table 2). The negative correlation is strongest with changes in government savings and non-resident saving changes. Changes in government saving are negatively correlated with corporate saving rates, but positively with non-resident saving rates, while corporate saving rates are negatively correlated, weakly, with non-resident saving rates.

For Canada, changes in household saving are negatively correlated with changes in government saving and corporate saving, but have a very weak relationship with non-resident saving rate changes (Table 3). Changes in government saving are very weakly related with changes in corporate or non-resident saving while corporate saving is negatively correlated with non-resident saving changes.In both nations there exists offsetting behavior. In some cases, such as the negative correlations between households and governments or corporations and non-residents, the correlation in annual changes likely reflects business cycle adjustments.

Table 2
Annual saving rate change correlations by sector, the United States, 1950 to 2011

	Household saving	Government saving	Corporate saving	Non-resident saving
		correlation		
Household saving	1.00	-0.45	-0.13	-0.36
Government saving	...	1.00	-0.36	0.35
Corporate saving	...	...	1.00	-0.20
Non-resident saving	...	...	...	1.00

... not applicable

Note: Authors' calculations based on data from the source indicated below.

Source: Bureau of Economic Analysis, National Income and Product Accounts.

Table 3
Annual saving rate change correlations by sector, Canada, 1950 to 2011

	Household saving	Government saving	Corporate saving	Non-resident saving
		correlation		
Household saving	1.00	-0.38	-0.56	0.05
Government saving	...	1.00	0.07	-0.09
Corporate saving	...	...	1.00	-0.38
Non-resident saving	...	...	...	1.00

... not applicable

Note: Authors' calculations based on data from the source indicated below.

Source: Statistics Canada, Canadian System of National Accounts.

The implication that effects across economic cycles are reflected in annual changes is further examined using estimates of sector-specific cycles. Here, a Hodrick-Prescott (H-P) filter is applied to the annual series. The cyclical component around the H-P trend for each sector is estimated, and correlations between the sector cyclical fluctuations are calculated (Tables 4 and 5). For consistency, the H-P filters are applied to data spanning the 1950-to-2011 period for each country. Two sets of calculations are presented: one for 1950 to 2011, and the other for 1980 to 2011. Correlations are used because the economic functions whose outcomes determine saving rates can differ markedly across sectors. The aim is not to imply causality, but to show how the pattern of saving changes as economic stimuli change. Data for the periods covering the Depression and the Second World War are omitted from the calculations because the cycles are so pronounced that they unduly influence the results.

Table 4
Correlations between cyclical saving rate fluctuations, by sector, Canada, 1950 to 2011 and 1980 to 2011

	Household	Government	Corporate	Non-resident
		correlation		
1950 to 2011				
Household	1.00	...	...	...
Government	-0.40	1.00	...	...
Corporate	-0.56	0.11	1.00	...
Non-resident	0.07	-0.14	-0.38	1.00
1980 to 2011				
Household	1.00	...	...	...
Government	-0.58	1.00	...	...
Corporate	-0.69	0.22	1.00	...
Non-resident	0.02	-0.17	-0.48	1.00

... not applicable

Note: Authors' calculations based on data from the source indicated below.

Source: Statistics Canada, Canadian System of National Accounts.

In Canada, household saving and government saving moved in opposite directions. Little cyclical correlation was evident between household and non-resident saving. The strongest correlation was between household and corporate saving: -0.56 for the 1950-to-2011 period. The strength of the correlations was greater for the 1980-to-2011 period.

Results are different for the United States. Again, the strongest correlations were between households and other sectors of the economy. However, non-resident and government saving, rather than that of corporations, had the strongest correlations for the 1950-to-2011 period. The correlations between corporate and household saving, and between corporate and government saving were weak. As with Canada, the U.S. correlations were stronger based on data for 1980 to 2011.

Table 5
Correlations between cyclical saving rate fluctuations, by sector, the United States, 1950 to 2011 and 1980 to 2011

	Household	Government	Corporate	Non-resident
		correlation		
1950 to 2011				
Household	1.00	...	...	...
Government	-0.64	1.00	...	...
Corporate	-0.09	-0.29	1.00	...
Non-resident	-0.56	0.29	-0.08	1.00
1980 to 2011				
Household	1.00	...	...	...
Government	-0.66	1.00	...	...
Corporate	0.10	-0.47	1.00	...
Non-resident	-0.63	0.38	-0.11	1.00

... not applicable

Note: Authors' calculations based on data from the source indicated below.

Source: Bureau of Economic Analysis, National Income and Product Accounts.

In both countries, household saving rates tended to be negatively correlated with those of other sectors. This implies a different response, and possibly, a different set of stimuli, affecting households across economic cycles. The U.S. results are less straightforward, which may be attributable to the United States being viewed as a safe haven.

3.4 National saving rate stability

Although national saving rates are more stable than individual sector saving rates, they still evolve through time. In particular, in the period after the Second World War, the Canadian gross national saving rate goes from being above that of the United States to being roughly equal to that of the United States. The change presents two questions which are examined here. The first is whether the difference between Canada and the United States was statistically significant, the second is whether the Canadian saving rate declines to match that of the United States; the United States saving rate rises to match that of Canada; or a combination of both. To examine these questions, the sample is divided into an early period (1950 to 1971) and a late period (1990 to 2011) to accentuate differences in mean saving rates.[2]

Regarding the first question, from 1950 to 1971, the average national saving rate in Canada was 24.7%, 3 percentage points higher than in the United States. The difference over this period is statistically significant at the 5% level (Tables 6 and 7). For the later period, from 1990 to 2011, the national saving rate for Canada was 21.8%, 0.8 percentage points higher than the

2. This strategy is used in several situations; for example, the Goldfeld-Quandt heteroskedasticity test employs a similar strategy.

21.0% in the United States, and, the difference is not statistically significant. The gap between the saving rates of the two economies disappears over the post-war period.

A second set of tests examines whether there is a difference between the average saving rate for the 1950-to-1971 period and 1990-to-2011 period for each nation (Chart 8). The direct test for the hypothesis that the average saving rates between the early period and later period is applied. In addition, a test that the early or the late period is equal to the long-run average is applied. The latter provides additional information about the stability of the national saving rates through time.

The test results indicate that for Canada, the average national saving rate for the 1990–to-2011 period is lower, by a statistically significant margin, than the Canadian average saving rate between 1950 an 1971. The opposite result holds for the United States. There, it is not possible to reject the hypothesis that there is no difference between the two periods. For Canada, tests of whether the average for the early period is equal to the long-run average, or the late period, reject the hypothesis of equality. For the United States, it is not possible to reject the hypothesis of equality.

The implication is that the Canadian saving rate has declined since the Second World War while the U.S. saving rate has been stable around a long-run mean. The disappearance of the statistically significant difference between Canadian (higher) and U.S. (lower) national saving rates resulted from the decline of the Canadian saving rate. In addition, this decline is sufficiently pronounced in Canada that a long-run estimate underestimates saving rates for the early period, in a statistically significant fashion, and overestimates saving rates for the late period by a statistically significant margin.

Table 6
National saving rates, mean values, Canada and the United States, selected periods, 1950 to 2011

	1950 to 1971	1990 to 2011	1950 to 2011	1950 to 2008	1990 to 2008
			rate (percent)		
Canada	0.25	0.22	0.23	0.23	0.21
United States	0.22	0.21	0.22	0.22	0.21

Note: Authors' calculations based on data from the sources indicated below.

Sources: Statistics Canada, Canadian System of National Accounts; and Bureau of Economic Analysis, National Income and Product Accounts.

Table 7
National saving rates, test results, Canada and the United States, selected periods, 1950 to 2011

	1950 to 1971	1990 to 2011
Null hypothesis: Canada rates equals U.S. rates		
t-test	5.51	1.22
p-value	0.00	0.23

Note: Authors' calculations based on data from the sources indicated below.

Sources: Statistics Canada, Canadian System of National Accounts; and Bureau of Economic Analysis, National Income and Product Accounts.

Table 8
National saving rates, period tests results, Canada and the United States, selected periods, 1950 to 2011

	Mean values	
	United States	Canada
Null hypothesis: average 1950-to-1971 rates equals average 1990-to-2011 rates		
t-test	-1.35	-3.06
p-value	0.19	0.00
Null hypothesis: average 1950-to-1971 rates equals average 1950-to-2011 rates		
t-test	-2.65	-4.27
p-value	0.01	0.00
Null hypothesis: average 1990-to-2011 rates equals average 1950-to-2011 rates		
t-test	3.79	6.03
p-value	0.00	0.00

Note: Authors' calculations based on data from the sources indicated below.

Sources: Statistics Canada, Canadian System of National Accounts; and Bureau of Economic Analysis, National Income and Product Accounts.

Assessing the causes of the decline in the national saving rate is beyond the scope of this analysis. It is true that some sectors, particularly households and governments, have reduced their saving rates since the 1960s and 1970s (see Section 4.1 below). Understanding the evolution of these sectors, and why their reduced saving was not offset by changes in other sectors, is one approach to determining the sources of the saving rate decline. Here, the changes are documented, but hypotheses about why the changes occurred are not examined.

4 Aggregations of sector saving rates

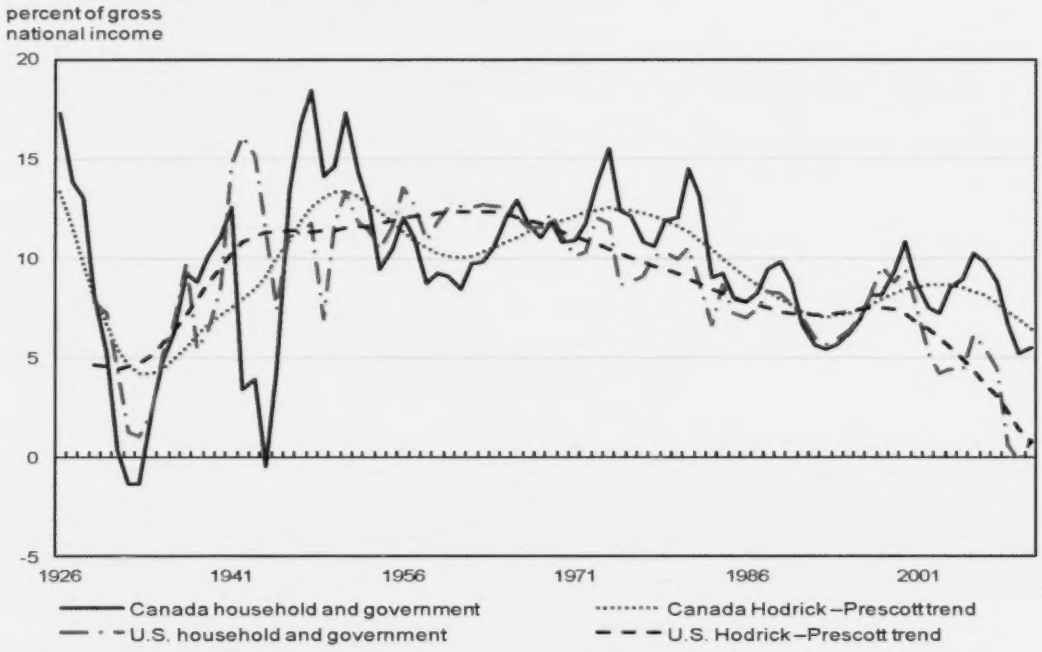
The analysis to this point has focused on short-run dynamics and has shown evidence of a slowdown in the Canadian national saving rate. The focus now moves to the long-run evolution of saving in particular areas of the Canadian and U.S. economies. An advantage of basing measurement on the System of National Accounts is that the economy can be dissected and re-aggregated to study particular features. In the context of saving rates, the national accounting structure allows for an examination of particular broad areas, three of which are examined here. The first is a combination of household and government saving, which roughly correspond to non-business domestic saving. The second is a combination of household and corporate saving, which corresponds to private domestic saving. The third is household plus government plus corporate saving, which corresponds to the domestic saving of the economy.

4.1 Non-business domestic saving (combined household and government)

Household saving contributes to the stock of assets owned by households that can be used for future consumption. A drop in the household saving rate raises concern, for example, that households will not be able to generate sufficient retirement income, save for education, or bridge periods of unemployment. This implicitly assumes that only the household saving rate is relevant for assessing inter-temporal consumption smoothing.

However, means of providing such services through government have been developed. Programs such as Social Security, Old Age Security and the Canada Pension Plan provide retirement income for people beyond their private saving, and employment insurance programs provide people who lose their jobs with temporary income. Moreover, in Canada and the United States, governments are involved in providing education and health care.

Chart 4
Non-business domestic (household and government) saving rates, Canada and the United States, 1926 to 2011



Note: Authors' calculations based on data from the sources indicated below.
Sources: Statistics Canada, Canadian System of National Accounts; and Bureau of Economic Analysis, National Income and Product Accounts.

The importance that society places on government programs and the investments in physical capital that governments make suggest that an expanded concept of saving is relevant for examining saving or dis-saving. In economic models, government debt represents a collective future liability for individuals. If those individuals induce governments to take on debt, they are, in effect, borrowing against their own (and future generations') income streams. The combined saving of households and governments is, therefore, germane to discussions of saving.

The combined household and government saving rate has been in long-term decline in Canada and the United States. Chart 4 shows the composite saving rate for each country, and estimates their trends using a Hodrick-Prescott (HP) filter. For the United States, the H-P trend was positive from the end of the Second World War until the early 1970s when it turned down. A

pause in the downturn occurred after the recession in the early 1990s, when the U.S. government produced a string of surpluses. However, the surpluses were not sustained, and the composite saving rate had resumed its downward trajectory by the 2007-to-2009 recession.

In Canada, the decline in the rate between the 1970s and 1991 was the result of falling household saving rates and rising government deficits. After the 1991 recession, the rate increased, but between 1994 and 2011, it was lower than it had been between 1961 and 1980: 7.9% versus 11.5%.

The U.S. household and government saving rate is similar to Canada's during a majority of the 1950s and 1960s. From the early 1970s to the early 1990s, the U.S. household and government saving is lower than that of Canada, before reaching roughly equal levels during the 1991 recession and its recovery. After the mid-1990s, the U.S. household and government saving rate reverts to its lower position. From 1994 to 2011, the rate averaged 7.9% of GNI in Canada (5.2% from the household sector; 2.7% for the government sector). After 2009, the rate averaged 5.4%. In the United States, government deficits brought the composite rate below the household saving rate: between 2002 and 2007, the composite rate averaged 5.0% of GNI, compared with 5.4% for the household sector. And as the 2007 recession took effect, the composite rate fell to 4.4% in 2008, to 0.6% in 2009, to -0.2% in 2010, and returned to a positive value at 0.8% of GNI in 2011.

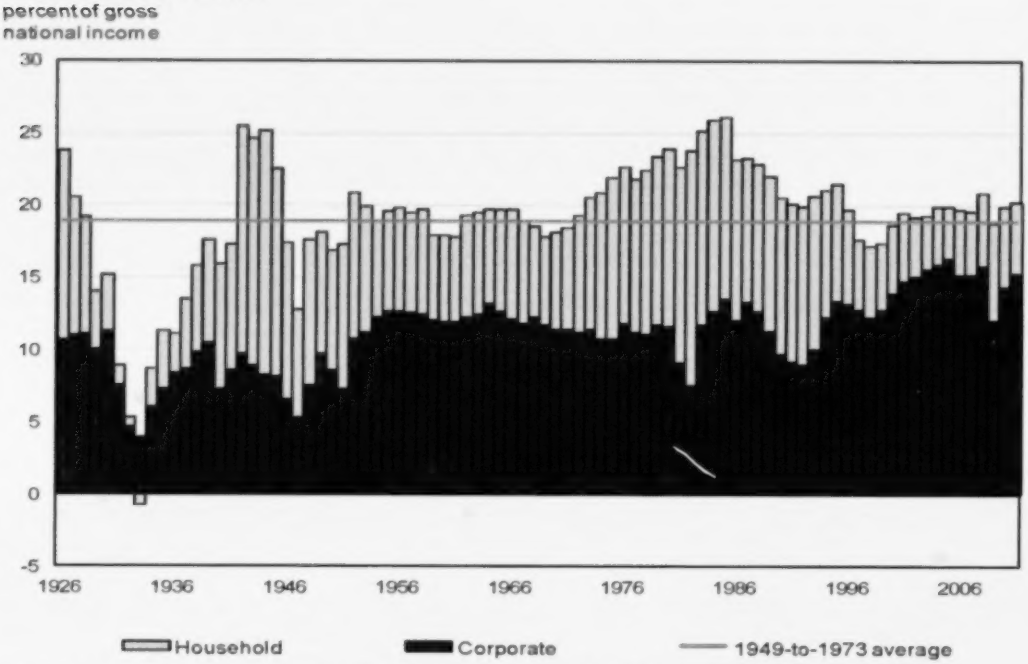
4.2 Private domestic saving (combined household and corporate)

Aggregating the saving rates of households and corporations yields a measure of the saving rate for these areas of the economy associated with private actions. The saving of these "private sector" agents has implications for investment and development. While emphasis is usually placed on households because their saving affects their ability to smooth consumption through time, corporate saving can influence household-sector financial portfolios, the stock of capital, and therefore, productivity.

In Canada and the United States, fluctuations in the household and corporate saving rate mainly reflect changes in the household rate (Charts 5 and 6, Table 9). The corporate saving rates in both countries moved pro-cyclically, and while they exhibited some adjustment over time, these changes were generally overwhelmed by movements in the household saving rates.

In Canada, the household and corporate saving rate averaged 18.9% of GNI between 1949 and 1973. As the household saving rate rose in the late 1970s and early 1980s, the combined saving rate reached 26.1% in 1985, but then declined. Since the 1990s, the level of private saving in Canada has been similar to levels in the "Golden Age," the 1950s and 1960s. However, the composition of the saving in the two periods differed. In the 1950s and 1960s, corporations and households had roughly equal saving rates. By contrast, in the 1990s, the corporate share rose as the household saving rate declined. By 2005, corporate saving accounted for 81.9% of the combined rate. The high corporate saving rates after 2000 imply a shift in the composition of private saving that would have reduced cash-flow-based investment restraints. They also reflect the health of some industries—notably, mining, oil and gas extraction and finance and insurance—during this period.

Chart 5
Private domestic (household and corporate) saving rates, Canada, 1926 to 2011

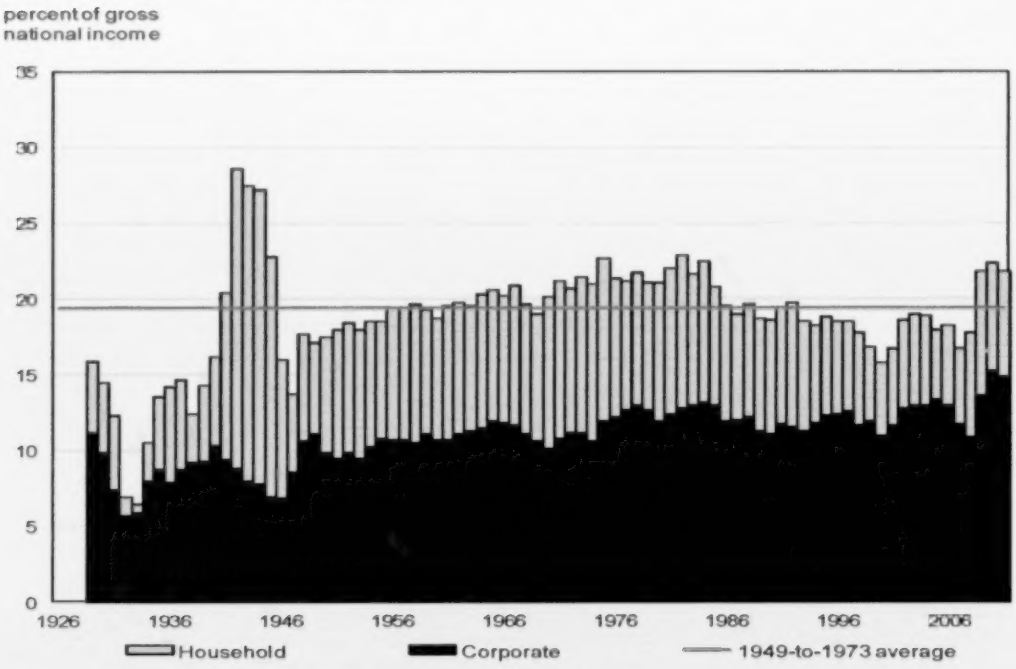


Note: Authors' calculations based on data from the source indicated below.
Source: Statistics Canada, Canadian System of National Accounts.

In the United States, the combined household/corporate saving rate averaged 19.4% of GNI between 1949 and 1973 (Chart 6), 0.5 percentage points more than in Canada. As in Canada, the corporate saving rate is pro-cyclical, and changes in the corporate rate are often overshadowed by changes in the household saving rate. Consequently, the decline in the household saving rate that began in the late 1970s and early 1980s is reflected in the combined saving rate.

During the 1950s and 1960s, the corporate sector accounted for around 55% of the private saving rate in the United States. The corporate share sector rose through the 1990s and early 2000s to a high of almost 74% in 2005. The decline in the household saving rate after the early 1980s resulted in a private saving rate below the 1949-to-1973 average.

Chart 6
Private domestic (household and corporate) saving rates, the United States, 1926 to 2011



Note: Authors' calculations based on data from the source indicated below.
Source: Bureau of Economic Analysis, National Income and Products Accounts.

Table 9
Private domestic (household and corporate) saving rates, by decade, Canada and the United States, 1950s to 2000s

	Canada		United States	
	Household saving	Corporate saving	Household saving	Corporate saving
		percent[1]		
1950s	7.8	11.2	8.4	10.3
1960s	6.7	12.2	8.6	11.2
1970s	9.7	11.2	9.6	11.6
1980s	12.4	11.5	8.4	12.4
1990s	8.1	11.4	6.7	11.8
2000s	4.7	14.9	6.0	12.8

1. Percent of gross national income.

Note: Authors' calculations based on the sources indicated below.

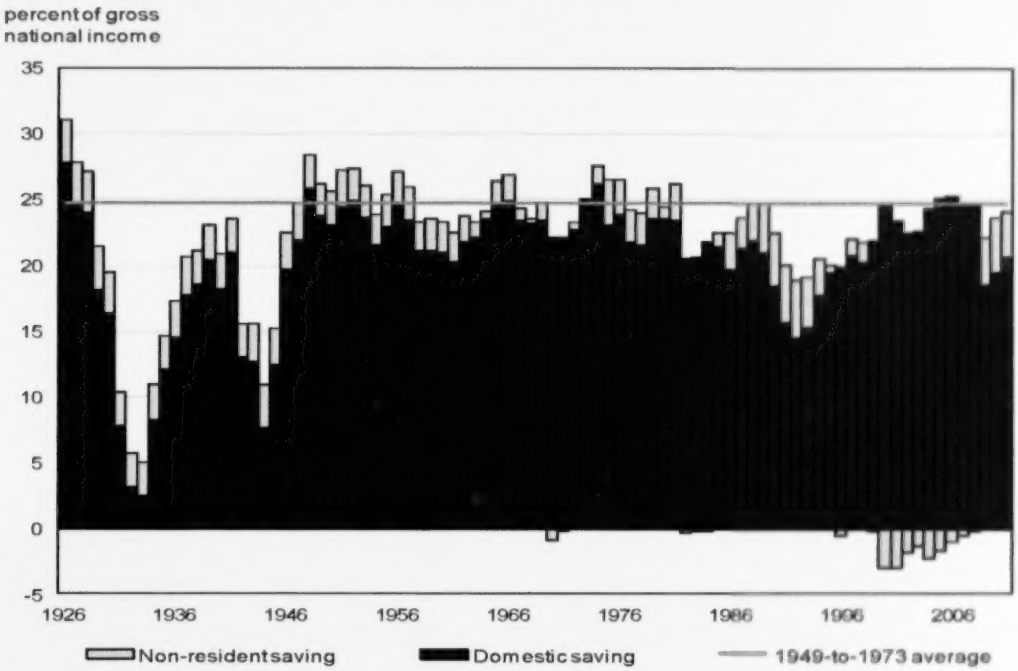
Sources: Statistics Canada, Canadian System of National Accounts; and Bureau of Economic Analysis, National Income and Product Accounts.

4.3 Domestic versus non-resident saving

An alternative aggregation of saving is domestic versus non-resident. The domestic sector is comprised of the household, government and corporate sectors. Contrasting domestic and non-resident saving illustrates the extent to which the financial capital available to an economy comes from external sources, and may, therefore, be susceptible to shocks in the global economy or changes in international capital flows.

The domestic sector has traditionally been the main source of saving in Canada and the United States (Charts 7 and 8, Table 10). However, in Canada, non-resident saving becomes more important during particular periods; for instance, in 1992, it accounted for more than one-fifth of national saving. Nevertheless, aside from the Great Depression, domestic saving has consistently been the primary source of national saving. In fact, domestic saving accounted for around the same percentage of GNI after 1999 as it did during the 1960s and 1970s.

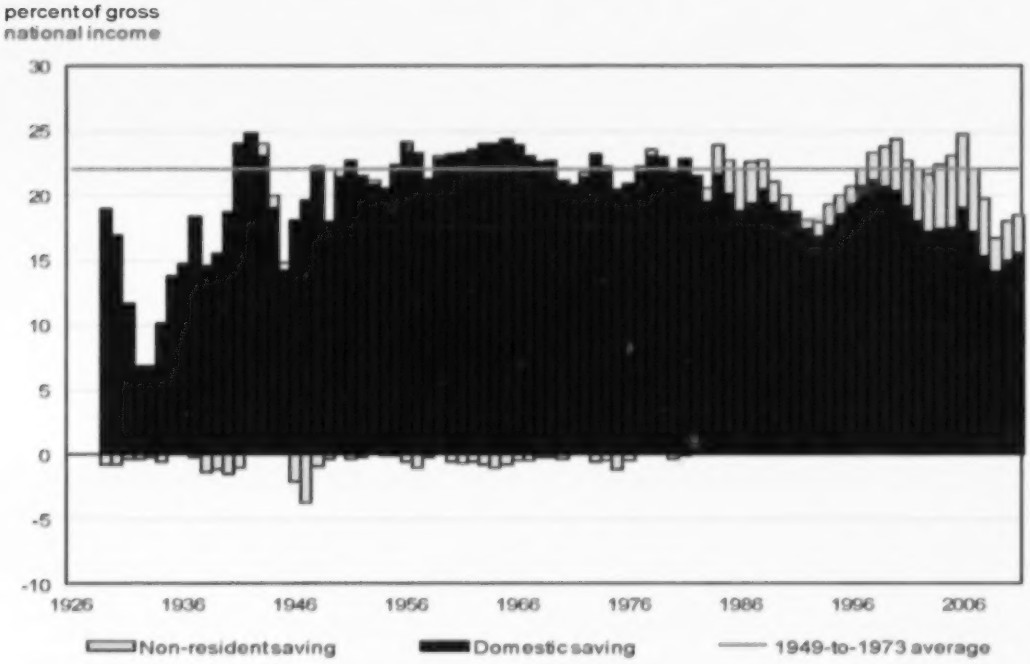
Chart 7
Domestic versus non-resident saving, Canada, 1926 to 2011



Note: Authors' calculations based on data from the source indicated below.
Source: Statistics Canada, Canadian System of National Accounts.

The major change in the pattern of domestic and non-resident saving in Canada occurred after 1998. From 1946 to 1998, the non-resident contribution was positive, raising the national saving rate by an average of 1.9 percentage points. However, from 1999 to 2008, non-resident saving reduced the national saving rate (-1.5 percentage points), as Canada went from being a recipient to a source of international investment flows. After 2008, a more historically consistent pattern was re-established, with non-resident saving contributing positively to national saving.

Chart 8
Domestic versus non-resident saving, the United States, 1926 to 2011



Note: Authors' calculations based on data from the source indicated below.
Source: Bureau of Economic Analysis, National Income and Product Accounts.

Table 10
Average domestic and non-resident saving rates, by decade, Canada and the United States, 1950s to 2000s

	Canada		United States	
	Domestic saving	Non-resident saving	Domestic saving	Non-resident saving
		percent[1]		
1950s	23.1	2.5	22.2	-0.1
1960s	22.9	1.5	23.5	-0.6
1970s	23.2	1.4	21.9	-0.1
1980s	21.6	1.6	20.6	1.6
1990s	18.5	2.2	19.0	1.4
2000s	23.0	-0.3	17.6	4.4

1. Percent of gross national income.

Note: Authors' calculations based on data from the sources indicated below.

Sources: Statistics Canada, Canadian System of National Accounts; and Bureau of Economic Analysis, National Income and Product Accounts.

For the United States, from 1929 to the early 1980s, non-resident saving tended to lower national saving rates because the United States was a net lender to the rest of the world. However, starting with the oil shocks in the 1970s, and accelerating through the 1980s, the non-resident sector began to contribute to national saving in the United States. Between 1983 and 1989, just over 10% of the saving in the United States was the result of non-residents lending to

Americans; the figure peaked at almost 14.1% in 1986. An increase in domestic saving in the 1990s lowered the non-resident share. While the bursting of the technology market bubble in 2001 reduced domestic saving relative to non-resident saving. And although the resumption of economic growth between 2002 and 2007 increased domestic saving, non-resident contributions made up more than a quarter of the total. The 2007-to-2009 recession brought domestic saving down to its lowest level since the Great Depression as corporate saving declined and government deficits rose. By 2009, national saving was 16.8% of GNI; non-resident saving contributed 2.6 percentage points. There was some turnaround in domestic saving in 2010 and 2011, but non-residents continued to represent more than 15% of national saving.

5 Conclusion

Analysis here focuses on components in half of the saving equals investment equation. The saving equals investment relationship is fundamental to examining economic growth and to the practice of national accounting. The structure of the System of National Accounts allows for an examination of which sectors are contributing to national saving.

The analysis here highlights features of sector saving in Canada and the United States that are not often discussed, or compared. Over the last 80 years, national saving rates declined in Canada but remained stable in the United States. In both nations, national saving rates are shown to be more stable than the saving rates of the underlying sectors, which move in opposite directions at annual frequencies and across cycles. Over longer periods, an evolution in saving patterns can shift emphasis from one sector to another. As a result, sector saving rates are poor predictors of aggregate saving rates, and hence, poor predictors of the aggregate investment rate.

These observations raise a number of questions. Among them are the degree to which investment activity in one sector can be facilitated by borrowing from other sectors (say, through an efficient financial system); why national saving rates declined in Canada (and if, in fact, they did; Baldwin, Gu and Macdonald 2012; Baldwin, Gu, Lafrance and Macdonald 2009; Corrado, Hulten and Sichel 2005, 2006); and whether the composition of investment (e.g. residential versus non-residential or private versus public) is affected by saving allocations or whether the pace of investment growth is influenced by saving rate patterns.

6 Appendix

An instrumental variables approach is used to extend the current Canadian data series (which dates from 1981) to estimates from 1926 to 1980, and thereby, create long-term time series. This approach makes it possible to construct the series based on published aggregates. Because of the length of the period and the age of some of the historical estimates, original source data are not available. Thus, it is not possible to re-create historical estimates based on current concepts.

The study uses data from three overlapping data vintages: a historical 1926-to-1986 vintage; a historical 1961-to-2011 vintage; and the current 1981-to-2011 vintage. There are two primary considerations for the instrumental variables approach used to link data from these vintages. The first is the degree to which concepts are consistent across vintages. The second is the degree to which the data are sufficiently correlated across vintages to act as appropriate instrumental variables. The former is a greater challenge than the latter.

The estimates used in the study are official estimates of income, outlay, capital consumption allowances (depreciation) and capital transfers based on the System of National Accounts. However, the System of National Accounts has evolved over time, as have the data sources and methods of calculating, inferring, and imputing income and expenditures.

For example, the treatment of clergy income differs between the 1961-to-2011 vintage and the 1981-to-2011 vintage. When the methods for the 1961-to-2011 vintage were developed, clergy in Canada tended to receive accommodation (use of a church-owned house) as part of their compensation. The value of that rental service was imputed as income, and added to the total value of labour compensation in the household sector. But when the methods for the 1981-to-2011 vintage were developed, clergy compensation typically did not include accommodation; instead, clergy were more likely to receive sufficient income to purchase accommodation through real estate markets. Thus, the modern data vintage produces a level and growth rate appropriate for the most recent years, while the historical vintage contains information appropriate to the period it covers. To use both sets of information, the modern levels are employed from 1981 to 2011. The growth rates in the historical vintage are then used to backcast that level from 1980 to1961.

This example produces only a minor change in aggregate values because clergy compensation is not a large component of labour compensation, and because the change was from an imputed value to a measured value, rather than from a 0 value to a measured value. However, larger changes can occur across vintages for imputed values in items like owner-occupied housing or some types of banking services. Nevertheless, even with changes in these components, the major items contributing to income and expenditure growth, like wages and salaries, non-imputed consumption, investment and profits, are largely unaffected. Consequently, growth rates tend to remain similar across vintages.

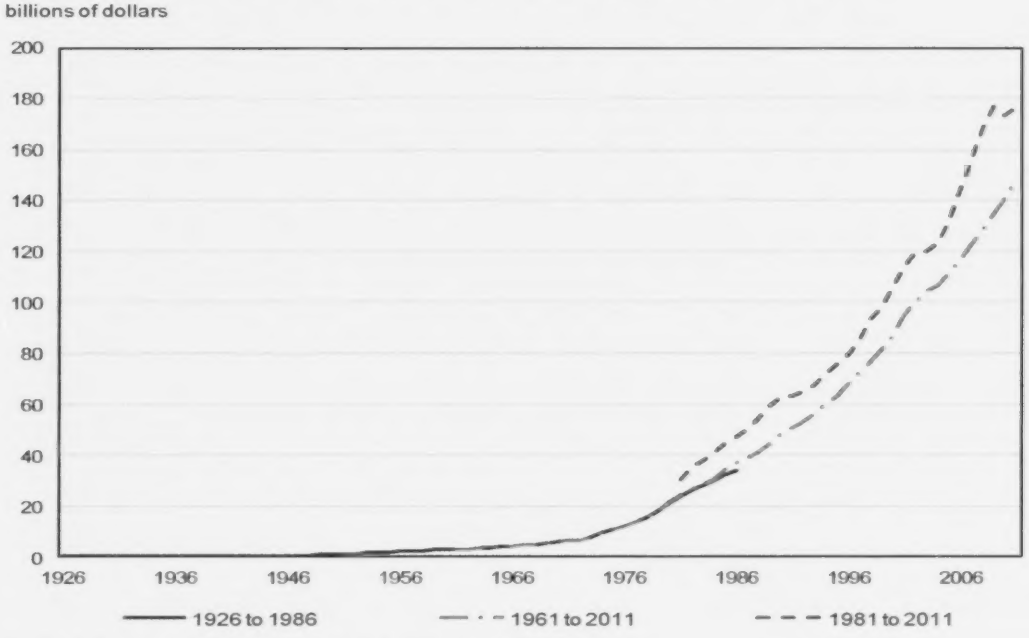
Because the measurement system has evolved as the economy has evolved, the instrumental variables approach assumes that the historical data represent the growth rates of the historical periods they cover. The 1981-to-2011 vintage is used as the starting point. Then, the 1961-to-2011 vintage is used to backcast over the 1961-to-1980 period. Finally, the 1926-to-1986 vintage is used to backcast from 1926 to 1960. For income, expenditure and capital consumption, the linking is done using growth rates. For capital transfers, levels are used. In this way, a backward-looking evolution of norms and concepts deemed appropriate by past Canadian national accountants is linked to current vintage levels.

Long-term time series are estimated for four sectors: households and non-profit institutions serving households (NPISH), corporations, governments, and non-residents. For each sector, estimates of income, outlay, current transfers, depreciation and capital transfers are calculated.

The components of income and outlay for each sector are listed in Tables 10 and 11. The income and outlay components have the most similarity across data vintages, and do not present an issue for linking.

The difference between income and outlay is the net saving rate. To calculate the gross saving rate, which is used in this paper, capital consumption (depreciation) and capital transfers are added to net saving. Capital consumption is recorded in each of the three domestic sectors (households and NPISH, corporations, governments), and the way it is calculated varies across data vintages. As a result, a level difference and a growth rate difference can emerge.

Chart 9
Corporate sector capital consumption allowance estimates, by data vintage, Canada, 1926 to 1986, 1961 to 2011 and 1981 to 2011

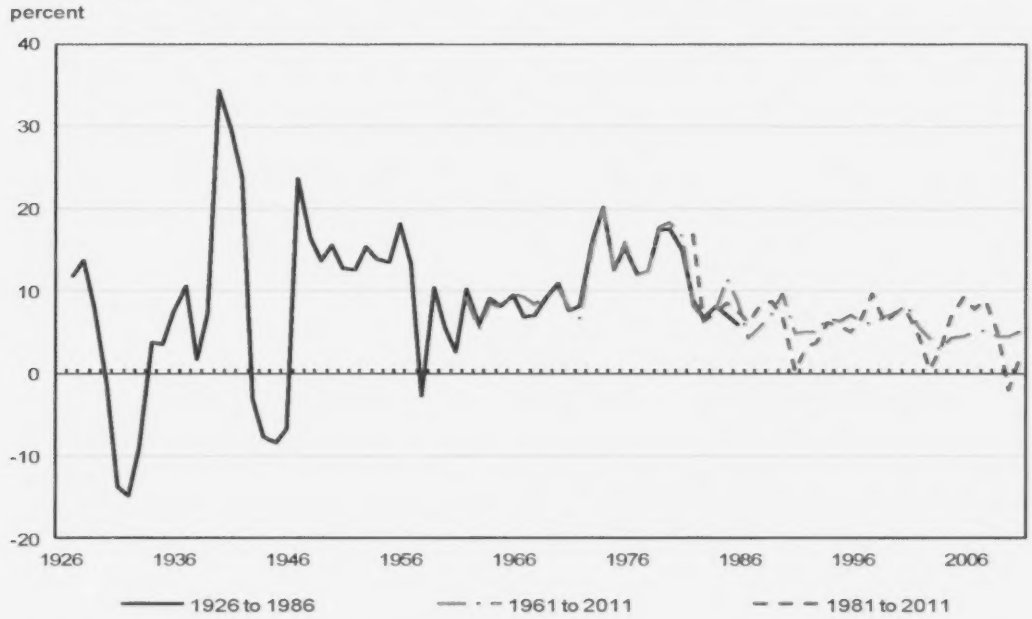


Note: Authors' calculations based on data from the source indicated below.
Source: Statistics Canada, Canadian System of National Accounts.

For example, capital consumption allowances for corporations are plotted in Chart 9. The estimates for the 1926-to-1986 and 1961-to-2011 vintages produce similar results, but the current 1981-to-2011 vintage estimates are higher and have a more variable growth rate through time where series overlap (Chart 10). Despite the relative weakness of the instrumental variable for capital consumption, the historical vintages are used to back-cast the modern level.

The historical data for capital consumption in the corporate sector are the weakest instrument employed. For the years from 1982 to 2011, the correlation between the growth rates for the 1981-to-2011 vintage and the overlapping 1961-to-2011 vintage is 0.50. The correlations improve for households (0.79) and governments (0.91).

Chart 10
Growth rate of corporate sector capital consumption allowance estimates, by data vintage, Canada, 1926 to 1986, 1961 to 2011 and 1981 to 2011



Note: Authors' calculations based on data from the source indicated below.
Source: Statistics Canada, Canadian System of National Accounts.

For capital transfers, the non-resident sector is a challenge because the way in which capital transfer was estimated changed between the 1961-to-2011 data vintage and the current 1981-to-2011 vintage. In the historical vintages, immigrants' net worth is treated as a capital inflow of capital, and the net worth of emigrants is treated as a capital outflow. In the current 1981-to-2011 vintage, non-resident capital transfers no longer contain migrants' funds. To produce consistent time series, the value of net migrants' funds is subtracted from the historical vintages capital transfer series. This makes capital transfers zero between 1926 and 1960, because only net migrant's funds were recorded under capital transfers.

Table 11
Income components across data vintages

	1926 to 1986	1961 to 2011	1981 to 2011
Household and NPISH	–Wages and salaries; –Supplementary labour income; –Accrued net income of farm operators from farm production; –Net income of non-farm unincorporated business including rent; –Interest, dividends and miscellaneous investment receipts; –Transfers from other sectors.	–Wages and salaries including net mixed income; –Supplementary labour income; –Unincorporated business net income; –Interest, dividends and miscellaneous investment receipts; –Current transfers from other sectors.	–Wages and salaries including net mixed income; –Supplementary labour income; –Rental income; –Property income; –Current transfers from other sectors.
Corporations	–Profits and other investment income; –Inventory valuation adjustment; –Interest, dividends and other miscellaneous investment income.	–Corporation and Government Business Enterprise profits before taxes; –Inventory valuation adjustment; –Interest, dividends and other miscellaneous investment income.	–Net operating surplus; –Property income received; –Current transfers received.
Governments	–Income taxes; –Succession duties and estate taxes; –Employer and employee contributions to social insurance; –Government Business Enterprises; –Corporation collections; –Corporation excess of liabilities over collections; –Withholding taxes; –Indirect taxes; –Other current transfers from persons; –Investment income.	–Direct taxes; –Contributions to social insurance plans; –Indirect taxes; –Other current transfers from persons; –Investment income; –Sales of goods and services.	–Taxes on products and imports; –Taxes on production; –Property income received; –Current transfers received.
Non-residents	–Receipts from sales of goods and services (Canadian imports); –Interest, dividends and miscellaneous investment income; –Current transfers.	–Sales of goods (imports); –Sales of services (imports); –Interest, dividends and miscellaneous investment income; –Current transfers.	–Sales of goods (imports); –Sales of services (imports); –Interest, dividends and miscellaneous investment income; –Compensation of employees, non-residents, w orking in Canada; –Current transfers.

Note: NPISH: non-profit institution serving households.

Table 12
Outlay components across data vintages

	1926 to 1986	1961 to 2011	1981 to 2011
Household and NPISH	–Purchases of consumer goods and services; –Current transfers.	–Personal expenditure on goods and services; –Current transfers.	–Final consumption expenditure; –Current transfers calculated net of transfers between Households and NPISH.
Corporations	–Interest, dividends and miscellaneous investment income payments; –Direct taxes; –Other current transfers.	–Interest, dividends and miscellaneous investment income payments; –Direct taxes; –Other current transfers.	–Property income paid; –Current transfers (including taxes).
Governments	–Government consumption purchases net of government sales to corporations; –Purchases of labour services; –Consumption of capital; –Current transfers; –Capital assistance to corporations and unincorporated businesses; –Pensions to non-residents; –Interest on the public debt.	–Gross current expenditure on goods and services; –Current transfers; –Interest on the public debt.	–Net general government final consumption expenditure; –Property income paid; –Subsidies on products and imports; –Current transfers.
Non-residents	–Purchases of goods and services (Canadian exports); –Interest, dividends and miscellaneous investment income payments; –Current transfers; –Surplus or deficit on current transactions with non-residents.	–Purchases of goods (exports); –Purchases of services (exports); –Interest, dividends and miscellaneous investment receipts; –Current transfers.	–Purchases of goods (exports); –Purchases of services (exports); –Property income paid; –Compensation of employees, non-residents working in Canada; –Current transfers paid.

Note: NPISH: non-profit institution serving households.

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